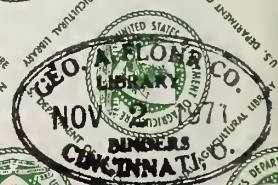


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FEDERAL - STATE - PRIVATE  
COOPERATIVE SNOW SURVEYS

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CURRENT SERIAL RECORDS

**WATER SUPPLY OUTLOOK**  
and  
**FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS**  
for  
**COLORADO and NEW MEXICO**

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE  
and

COLORADO AGRICULTURAL EXPERIMENT STATION  
STATE ENGINEER of COLORADO  
and STATE ENGINEER of NEW MEXICO

Data included in this report were obtained by the agencies named above in cooperation with the Bureau of Reclamation, U.S. Forest Service, National Park Service, Corps of Engineers and other Federal, State, and private organizations.

**SPECIAL  
MEASUREMENT**

# UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

## To Recipients of Water Supply Outlook Reports:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season as they affect runoff will add to be an effective average. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data or reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

Listed below are water supply outlook reports based on Federal-State-Private Cooperative snow surveys. Those published by the Soil Conservation Service may be obtained from Soil Conservation Service, Room 507, Federal Building, 701 N. W. Glisan, Portland, Oregon 97209.

### PUBLISHED BY SOIL CONSERVATION SERVICE

<u>REPORTS</u>	<u>ISSUED</u>	<u>LOCATION</u>	<u>COOPERATING WITH</u>
RIVER BASINS			
WESTERN UNITED STATES	MONTHLY (FEB.-MAY)	PORTLAND, OREGON	ALL COOPERATORS
BASIC DATA SUMMARY	OCTOBER 1	PORTLAND, OREGON	ALL COOPERATORS
STATES			
ALASKA	MONTHLY (MAR.-MAY)	PALMER, ALASKA	ALASKA S.C.D.
ARIZONA	SEMI-MONTHLY (JAN.15 - APR.1)	PHOENIX, ARIZONA	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO AND NEW MEXICO	MONTHLY (FEB.-MAY)	FORT COLLINS, COLORADO	COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO	MONTHLY (JAN.-JUNE)	BOISE, IDAHO	IDAHO STATE RECLAMATION ENGINEER
MONTANA	MONTHLY (JAN.-JUNE)	BOZEMAN, MONTANA	MONT. AGR. EXP. STATION
NEVADA	MONTHLY (JAN.-MAY)	RENO, NEVADA	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
OREGON	MONTHLY (JAN.-JUNE)	PORTLAND, OREGON	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
UTAH	MONTHLY (JAN.-JUNE)	SALT LAKE CITY, UTAH	UTAH STATE ENGINEER
WASHINGTON	MONTHLY (FEB.-JUNE)	SPOKANE, WASHINGTON	WN. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEB.-JUNE)	CASPER, WYOMING	WYOMING STATE ENGINEER

### PUBLISHED BY OTHER AGENCIES

<u>REPORTS</u>	<u>ISSUED</u>	<u>AGENCY</u>
BRITISH COLUMBIA	MONTHLY (FEB.-JUNE)	WATER RESOURCES SERVICE, DEPT. OF LANDS, FOREST AND WATER RESOURCES, PARLIAMENT BLDG., VICTORIA, B.C., CANADA
CALIFORNIA	MONTHLY (FEB.-MAY)	CALIF. DEPT. OF WATER RESOURCES, P.O. BOX 388, SACRAMENTO, CALIF.

## EARLY SEASON SNOW REPORT FOR COLORADO

January 1, 1966

Water Supply Outlook  
Federal-State-Private-Cooperative Snow Surveys

Snow Survey Section  
Soil Conservation Service  
Colorado State University  
Fort Collins, Colorado

Report Prepared by  
Jack N. Washichek and  
Donald W. McAndrew  
Soil Conservation Service

SNOW COURSE	Current Information			Past Record		
	Date	Snow	Water	Water Content In Inches		
	of	Depth	Content	Jan. 1	Jan. 1	Feb. 1
	Survey	Inches	Inches	1948-62	Last	1948-62
				Average	Year	Average
Berthoud Summit	12/28	24	6.1	8.4*	8.6	12.3*
Columbine Lodge	12/30	32	8.0	7.7*	12.1	15.7
Fremont Pass	12/28	22	4.5	6.1*	9.6	10.7
Mesa Lakes	12/30	32	8.9	5.2**	8.6	10.8
Porphyry Creek	12/30	27	6.0	7.4*	10.3	10.5
Red Mountain	NS			11.6	16.5	18.0*
Spud Mountain	12/29	64	15.6	8.6*	15.1	16.7*
Tennessee Pass	12/29	20	4.0	3.5**	7.3	6.4
University	12/30	22	5.5	8.1	NS	12.9
Upper San Juan	12/30	78	20.3	12.2*	19.8	21.7
Vail Pass	12/29	28	7.0	5.4*	10.9	10.9*
Wolf Creek Pass	12/30	71	20.0	9.4*	18.8	19.3
Wolf Creek Summit	12/30	81	21.3	13.1*	18.7	19.1*

\* Averages adjusted to 1948-62 period.

\*\* Less than 5 years averaged.

The early season snow cover varies widely over Colorado this year. In the headwaters of the Colorado River and the front range streams of the South Platte, the snow cover is currently 70% of the average. In the South Western part of the State, the snow is currently 180% of average. This is more snow than last year at this time. The Arkansas Basin is about 90% of average, but only one-half as good as last year. The Rio Grande is loaded again this year. Currently the snow pack is 163% of normal in the Wolf Creek Pass area.

Mountain soils under the snow are very moist this season. This condition will increase our chances for a good snow melt runoff this coming spring.

Only about one-third of the snow season has passed. Most of the State is off to a good start. More snow will be needed in the South Platte and Arkansas Basins to ensure normal runoff. But both of these areas have excellent reservoir storage.



# WATER SUPPLY OUTLOOK

## Federal-State-Private Cooperative Snow

### Federal-State-Private Cooperative Snow Surveys Special Snow Report for Colorado and Wyoming

SOIL CONSERVATION SERVICE  
Snow Survey Section  
Colorado State University  
Fort Collins, Colorado

May 15, 1966

Report Prepared by  
Jack N. Washichek and  
Donald W. McAndrew  
Soil Conservation Service

Snow Course	Date	Current Information		Past Record		
		Snow Depth	Water Content	May 15	May 15	May 1
		In Inches	In Inches	1965	Avg.	Avg.
<u>Colorado</u>						
Cameron Pass	5/12	38	12.9	34.6	25.3	28.1
Willow Creek Pass	5/12	9	2.4	10.9	6.8	12.0
Park View	5/12	0	0.0	4.6	2.0	6.8
Columbine Lodge	5/13	0	0.0	22.5	13.9	22.9
Berthoud Summit	5/12	32	9.9	23.1	21.7	21.6
Red Mountain	5/13	44	17.0	35.8	30.7	31.4
Fremont Pass	5/13	26	7.9	21.2	14.6	19.5
Tennessee Pass	5/13	0	0.0	6.2	0.0	8.5
Vail Pass	5/13	6	1.4	20.0	10.4	16.3
Porphyry Creek				24.0	14.0	17.7
Mesa Lakes	5/11	1	0.4	17.5	9.3	15.9
Wolf Creek Pass	5/13	12	6.2	37.3	16.2	24.7
Wolf Creek Summit	5/13	67	29.5	48.6	31.5	30.2
Spud Mountain	5/13	35	12.1	35.9	19.5	23.8
Upper San Juan	5/13	16	6.8	39.3	21.6	30.2
Two Mile	5/11	28	8.6	22.7	17.2	19.8
University Camp	5/15	12	4.2	25.0	21.4	24.9
Milner Pass	5/13	4	0.8	14.6	- -	12.1
<u>Wyoming</u>						
Bottle Creek	5/16	0	0.0	12.6	4.5	11.1
Webber Springs	5/16	4	1.6	17.9	8.0	15.8
Old Battle	5/16	46	19.8	36.6	27.4	33.2
No. French Creek	5/16	49	22.6	30.9	29.6	32.7
No. Barrett Creek	5/16	20	9.7	22.7	16.9	20.4
Ryan Park	5/16	0	0.0	5.8	3.8	7.7

Most of this year's low to medium elevation snow pack has already melted. The very high elevation snow pack is all that remains. The storm of May 11 and 12th added as much as 6" of snow with 1" of water content to the high elevations. The storm was probably more beneficial to the plains and high meadows than to the over-all water supply outlook. Less than 1/2 of average snow pack for this date remains.



# WATER SUPPLY OUTLOOK

## Federal-State-Private Cooperative Snow Surveys Special Snow Report for Colorado and Wyoming

SOIL CONSERVATION SERVICE  
Snow Survey Section  
Colorado State University  
Fort Collins, Colorado

June 1, 1966

Report Prepared by  
Jack N. Washichek and  
Donald W. McAndrew  
Soil Conservation Service

Snow Course	Date	Current Information		Past Record		
		Snow Depth In Inches	Water Content In Inches	June 1 1965	June 1 Avg.	May 1 Avg.
<u>Colorado</u>						
Cameron Pass	5/26	17	7.4	31.0	20.8	28.1
Willow Creek Pass	5/26	0	0.0	3.5	1.6	12.0
Park View	5/26	0	0.0	0.5	0.1	6.8
Columbine Lodge	5/27	0	0.0	10.6	3.8	22.9
Berthoud Summit	5/27	6	2.1	20.9	16.2	21.6
Red Mountain	5/31	0	0.0	31.6	18.5	31.4
Fremont Pass	5/27	1	0.4	19.0	8.8	19.5
Tennessee Pass	5/27	0	0.0	0.0	0.0	8.5
Vail Pass	5/27	0	0.0	15.0	3.2	16.3
Porphyry Creek	5/27	0	0.0	18.6	6.5	17.7
Mesa Lakes	5/28	0	0.0	7.1	--	15.9
Wolf Creek Pass	5/26	0	0.0	25.5	6.3	24.7
Wolf Creek Summit	5/26	46	22.8	48.6	24.6	30.2
Spud Mountain	5/31	0	0.0	31.2	12.3	23.8
Upper San Juan	5/26	2	1.3	27.8	4.2	30.2
Two Mile	5/27	15	5.0	21.2	14.1	19.8
University Camp	5/27	0	0.0	20.0	14.9	24.9
Milner Pass	5/27	0	0.0	7.1	--	12.1
<u>Wyoming</u>						
Bottle Creek	5/27	0	0.0	1.5	--	11.1
Webber Springs	5/27	0	0.0	6.2	4.6	15.8
Old Battle	5/31	15	7.4	28.5	19.6	33.2
No. French Creek	5/31	18	8.7	29.3	24.4	20.4
No. Barrett Creek	5/31	0	0.0	16.1	10.9	20.4
Ryan Park	5/27	0	0.0	NS	0.0	7.7

Practically all snow has now disappeared from the medium elevation. Only a very small amount of snow remains at the high elevations. Unless summer rains are plentiful, streamflow throughout the state will be below normal. The Arkansas, and South Platte Drainages could have one of the lowest flows on record.



# LIST of COOPERATORS

The following organizations cooperate in snow surveys for the Colorado, Platte, Arkansas and Rio Grande watersheds. Many other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

## STATE

Colorado State Engineer  
New Mexico State Engineer  
Nebraska State Engineer  
Colorado Experiment Station  
Rocky Mountain Forest and Range Experiment Station

## FEDERAL

Department of Agriculture  
Forest Service  
Soil Conservation Service

Department of Interior  
Bureau of Reclamation  
Geological Survey  
National Park Service  
Indian Service

Department of Commerce  
Weather Bureau

War Department  
Army Engineer Corps

Atomic Energy Commission

## INVESTOR OWNED UTILITIES

Colorado Public Service Company  
Public Service Company of New Mexico

## MUNICIPALITIES

City of Denver                      City of Greeley  
City of Boulder                      City of Fort Collins

## WATER USERS ORGANIZATIONS

Arkansas Valley Ditch Association  
Colorado River Water Conservation District

## IRRIGATION PROJECTS

Farmers Reservoir and Irrigation Company  
San Luis Valley Irrigation District  
Santa Maria Reservoir Company  
Costilla Land Company  
Uncompahgre Valley Water Users' Association  
Twin Lakes Reservoir and Canal Company  
Trinchera Irrigation Co.

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
SNOW SURVEY UNIT  
AG. ENGINEERING SHOP  
COLORADO STATE UNIVERSITY  
FORT COLLINS, COLORADO 80521

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